

TOOLS

BASIC MASONRY TOOLKIT

TEXT AND PHOTOS BY MERLE HENKENIUS

● Of the many jobs that homeowners are likely to take on themselves, concrete and masonry improvements are among the most frequently avoided. To most of us, these jobs seem just too heavy and unforgiving to tackle alone. And the skills required to get the work done right the first time are often specialized and unfamiliar.

While these reservations may be justified on large projects, most smaller concrete and masonry chores are within just about everyone's reach. With some preparation and the right equipment, jobs like repairing loose brickwork, pouring a walkway slab and even building a concrete-block wall are well within the range of the average do-it-yourselfer's abilities. And, starting off with the right tools can make all the difference between a job well done and a call to a pro to make things right.

The 17 tools featured here will help you handle any masonry or concrete project—large or small. Our collection is made up of professional-grade tools. While the complete toolkit isn't cheap (ours totaled about $225), buying better quality tools is generally an economical move if you expect to use them often. With the exception of the trowels, however, you could substitute less expensive equipment. Cheap trowels, by contrast, will leave their signatures on every job. A few years from now, you'll have forgotten the extra dollars paid for a better tool, but the results of an unsatisfactory, inexpensive tool will be around for some time.

Along with describing each tool shown, we offer some basic information on how and when the tools are used. Most of the tools are designed either for concrete work—slabs, walks and driveways—or masonry projects—laying brick or concrete block, or repairing mortar joints. Depending on the kind of projects you're going to handle, you may need all of the tools or you may get by with a selection that suits the job at hand.

Mortar mixing tub—When mixing small quantities of mortar or cement with a garden hoe or shovel, a plastic mortar box is a handy piece of equipment. Made of tough, flexible ABS plastic, these seamless tubs are easy to clean—even when the mortar has been allowed to set for too long. The usual size will handle roughly 2-cu.-ft. batches at a time (two bags of premixed concrete).

Larger projects, of course, require a rotating-drum-type mixer or curbside truck delivery. Electric- or gas-powered rotating-drum mixers can be rented when they're required.

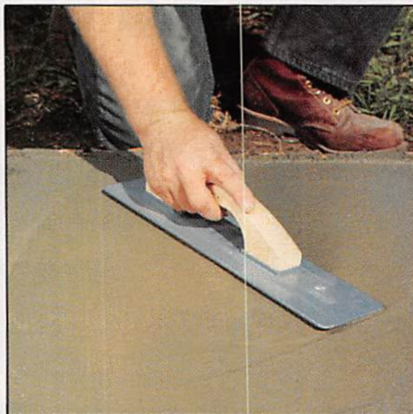
Concrete finishing float—When constructing concrete slabs, the concrete is first poured into wooden forms, and then screeded (trimmed level to the top of the form with a 2 × 4 or 2 × 6 board). The next step, after the water settles, is to float the surface with a magnesium or wood hand float. Sweeping the float across the surface will smooth and compact the concrete. It will also draw cement up to the surface for a harder finish. A floated slab of concrete should have an even, but gritty appearance.

When floating, start with a small area. If the surface puddles and appears too smooth, you've started too soon—wait for the slab to dry slightly before trying again. Floating too early will cause crazing or dusting at the surface. Crazing is a condition where the surface develops tiny hairline cracks. Dusting is evidenced by a chalky appearance on the cured surface. Both of these conditions are avoidable if you float the slab at the correct time.

Edger and groover—After floating and before the final troweling, edgers and groovers are used to trim the slab perimeter and form control joints. When the concrete begins to set, run an edger around the slab using the inside of the form as a guide. Ideally, the edger should round and compact the slab's edge without puddling or lining the concrete. If the concrete appears too wet, wait awhile and then try again.

Cutting control joints with a groover should be done at about the same point in the process. Keep in mind that control joints are not merely decorative. By cutting a groove across a slab of concrete, the slab is deliberately weakened along that line. Stresses that might ordinarily create a crack along the slab surface will, instead, cause the slab to crack precisely and invisibly in the groove.

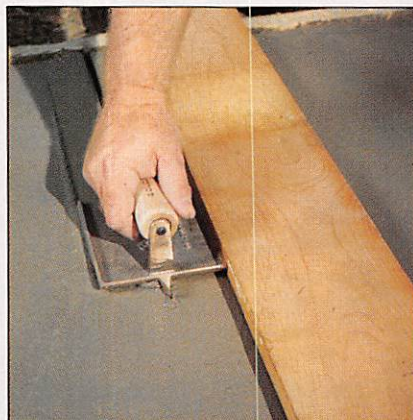
It's best to use a deep-blade groover to make control joints. If you have a shallow groover, use a trowel to cut the groove deeper. A control cut should penetrate one-quarter of the slab thickness. Control joints should be cut about every 40 in. in sidewalks and every 10 ft. in driveways.



1 After screeding the concrete level with the form, use a hand float to smooth the slab and pull cement to the surface.



2 When the surface has been floated, compact and round the slab perimeter with an edger. Follow the inside of the form.



3 Use a groover to cut control joints in sidewalks, drives and outdoor slabs. It should penetrate one-quarter of thickness.



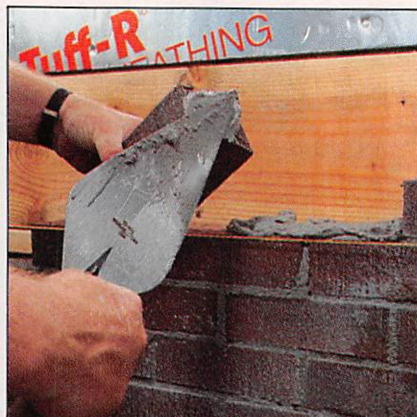
4 Finish by sweeping a trowel in half circles across slab. Hold the trowel nearly level and use two passes for a smooth surface.

Concrete finishing trowel—After the edges are trimmed, control joints are added and the concrete begins to set, the surface should be troweled with a good, long finishing trowel. Extra-smooth surfaces require two trowelings, while coarse surfaces may be troweled once and then broomed (drawing a broom across the surface to create a uniform texture). The trowel should glide over the surface in crescent-shaped sweeps and be held in a nearly flat position. As with floating, try a small area first. If you see water puddling behind the trowel, or the trowel leaves distinct edge lines or chatter marks (tiny ripples), then wait a bit longer.

Troweling at the right time is critical, so test the surface often. Ideally, the trowel will smooth the floated surface with two or three passes under medium pressure. Keep in mind that when troweling a large slab, you'll have to average out the entire job around the ideal troweling time. In other words, if it takes 30 minutes to trowel the slab, start when the surface is on the wet side of ideal. Otherwise, the concrete will be too dry to trowel properly when you reach the end of the job.

Avoid adding extra water to the mix in anticipation of the concrete setting before you've finished troweling. Although it may seem like this will provide added time to work, a wetter mix is always weaker than a dryer pour. Instead, you can extend the slab's setting time by wetting the soil bed before pouring the concrete.

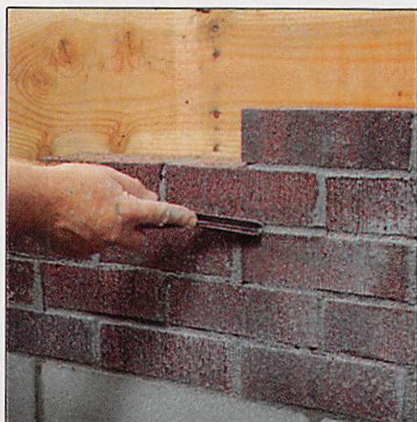
If you're going to pour from a truck delivery, it's a good idea to have the driver come prepared with a small bottle of superplasticizer. When added to the mix before pouring, this additive will cause the concrete to work and feel wetter for about an hour, without actually being wetter.



5 Use mason's trowel to first spread mortar along preceding course. Then butter end of the next brick and set in place.



6 With the new brick in place, tap it down with the trowel handle and slice away the excess mortar with the trowel edge.



7 Once the mortar in the joint begins to set, strike each joint with a jointer to form a smooth, compressed seam.



8 To cut a concrete block, tap the chisel lightly in a line completely around the block until the two halves fall apart.

Masonry trowel—The masonry trowel is the workhorse of the mason's trade. With it, you'll butter the ends of bricks and blocks, tap them into place, and even break bricks in two (by striking the brick several times with the trowel edge). For these reasons, a bargain-basement trowel just isn't good enough.

Masonry trowels are available in different sizes. Use a small one for brickwork and a large one for concrete block. If you're only going to buy one, an 8- to 10-in. model is a reasonable compromise. This size may feel a little hefty for smaller jobs, but it will stand the test of time.

Jointer—A jointer is a narrow tool designed to fit between blocks or bricks for smoothing and sealing the mortar joints. It's used after the mortar has begun to set, and the most common type leaves a recessed, concave mortar line. Other styles are available for forming V joints or weather joints where the mortar is flush with the lower course, but angled back so it's recessed under the upper course.

The mortar joint in brickwork is often finished with a related tool called a rake. Performing the same job as a jointer, this tool has two wheels and a protruding blade. When run along the joint, the blade trims the mortar to a uniform depth.

Masonry levels—Because a perfectly level and plumb wall is the ultimate goal, you'll need to own a level—and use it often. A short torpedo level is useful for leveling individual bricks or blocks, while a 4- to 6-ft. level will keep the wall plumb and true. You won't need to check every block, or even every course of blocks, but you should check regularly to catch any accumulating error in level or plumb.

Mason's rule—The mason's rule is a folding ruler that has a variety of spacing marks on its side. These are designed to help determine the number of courses in a wall and the mortar width. When bricking a wall that extends from a foundation to a soffit, for example, the first thing to determine is how many courses of brick will be needed to fill the space. You'll also need to know about any adjustment in mortar thickness so that the last course ends at the correct height. The spacing indicators printed on a mason's rule make these calculations quick and easy. However, you can do the job with an ordinary tape measure, pencil and note pad.

Brick line—The best way to keep each and every course from pitching up or down is to stretch a taut string horizontally along the wall. This string, or brick line, is tied at each end to story poles, usually made on site from 2 × 4s. Each story pole has a mark every 8 in. so that a level line can be stretched across the wall at 1-block intervals.

Mason's hammer and chisels—A mason's hammer serves two purposes. It can be used conventionally to drive chisels and nails, or it can be turned over and used as a chisel to break blocks and bricks. However, the break that a hammer makes is fairly crude. To produce a more exact cut, a chisel is used. You'll find a variety of chisels available on the market from 4-in. cold chisels to tooth-edged mortar chisels.

When cutting blocks or bricks, use a cold chisel with a 3- or 4-in.-long edge. However, don't try to do the job in one stroke. Instead, tap lightly in a line all around the block until it breaks evenly. The aim is to create a series of stress cracks that follow the line made by the chisel.

Tooth-edged chisels are used to remove old mortar and clean mortar joints in preparation for tuckpointing.

Tuckpoint trowel—Tuckpointing is a method of packing mortar neatly between bricks or building stones. The method is frequently used to restore old masonry walls whose mortar is soft and crumbling.

In a typical situation, the joints are first cut deeper and cleaned with a tooth-edged chisel. Mortar is then placed on a mason's trowel, and the trowel is held against the brick next to the cleaned joint. The tuckpoint trowel is then used to slice off small amounts of mortar and squeeze it into the gap between the bricks or stones.

Cleanup brushes—If you do much concrete or masonry work, you'll need at least two cleanup brushes. A soft-bristle acid brush and water will help rinse away mortar and concrete from tools and walls. If brick walls show too much mortar residue, they'll need to be brushed with muriatic acid or a special masonry detergent. Really stubborn bits of mortar and concrete can be brushed from tools and work with a wire-bristle brush. **PM**

OUTDOOR PROJECT

A BETTER BIN

Build our compost bin and turn over an old leaf.

TEXT & PHOTOS BY ROSARIO CAPOTOSTO, Contributing Editor

● In this day and age of bloated landfills and restricted curbside trash service, we're all being confronted with the high cost of dealing with waste. And while there are some things we'll always need taken away, leaves, grass clippings, table scraps and most other organic materials can easily stay at home. All we have to do to recycle this waste is be willing to start a compost pile.

Of course, backyard composting facilities often are unsightly arrangements best relegated to a hidden area of your yard. But not so with the version that's shown here, which we designed with help from the folks at the California Redwood Association. It's attractive enough to be prominently located anywhere on your property. And, it's dimensioned to process about ⅔ cubic yards of organic material in each bin, yielding an ample supply of compost for the average garden on a continuing schedule.

Materials

The bin is built of redwood—the ideal lumber because of its pleasing appearance and remarkable resistance to decay and insect infestation, particularly termites. Not all redwood will serve the purpose, however. Only the reddish-brown heartwood from the tree's core contains the substances that render it decay resistant. The creamy-colored sapwood that makes up the outer layer of the tree is not insect and decay resistant.

Therefore, try and get Construction Heart grade redwood. If this is unavailable or too expensive, the next best grade is Merchantable Heart grade. Both these grades are suitable for soil-contact applications. The former has knots of varying sizes and minor imperfections. The latter has larger knots, some splits and some manufacturing flaws. Also, request either grade as surfaced, not unsurfaced (rough sawn).

The bin features removable front slats for easy access to the compartments, which are lined on the sides, back and bottom with wire mesh (also known as hardware cloth). This keeps out animals while allowing air to circulate and water to drain. The mesh floor prevents ground-burrowing pests from getting in, but allows beneficial earthworms to migrate up into the pile. The plastic Filon panel lid is extremely durable, keeps the compost from getting soaked when it rains and tends to let through some solar energy—especially in cooler months—to keep the piles warm.

Frame Construction

The construction is relatively simple and can be accomplished with a circular saw, an electric drill and several hand tools.

Begin by cutting the 2 × 4s to length for each frame. The top of the frame is pitched down 2 in. across the bin's width. To achieve this pitch, crosscut the tops of the front and rear frame members at a 3° bevel. Use a crosscutting guide to ensure accurate, smooth cuts (Photo 1).

Assemble the end and divider frames using two 16d common galvanized nails at each joint (Photo 2). Label each frame and position them bottom side up as they will be when assembled. Place the 2 × 6 base members on top of the frames using a scrap block to position them with a ¾-in. overhang at the ends, front and back (Photo 3).

Hold the frame and base pieces in position with a clamp at each point where the frame and base pieces overlap. Bore the ½-in.-dia. holes for the







carriage bolts as indicated in the drawing (Photo 4). Temporarily insert the bolts, then rip and crosscut the bottom mesh nailers to size and attach them to the bottom frame members with 6d galvanized common nails (Photo 5).

Attach Wire Mesh

Remove the frames from the base pieces to permit the nailing and stapling operations that follow. Start by fastening the nailer strip to the back of each 2 × 4 front vertical member (Photo 6).

Next, cut six pieces of wire mesh 33 in. long from a 36-in.-wide roll. Lay the mesh across each frame, clamp a strip of wood across it and fold over the mesh so it conforms to the slope of the frame. Use a block of wood to distribute the pressure evenly across the mesh (Photo 7). Finish folding over the edge by placing the mesh on a flat surface and working over the fold with a block of wood and a hammer (Photo 8). This produces a neat exposed edge, free of sharp points that could easily injure even the most careful user.

Use ¾-in. galvanized staples (also called poultry net nails) to attach the mesh, spacing them 4 in. apart. Attach the mesh to both sides of the dividers. Leave about 1 ft. unstapled at the bottom on one side of each divider frame, so later you can tighten the nut on each bolt that fastens the base pieces to the frames.

Rip and crosscut the rear and front runners to size. Chisel a slight recess at the top of the rear runners to allow them to fit tightly against the frame where the mesh is doubled over. Nail the rear runners on the end frames and on one side of each divider frame,

Lumber: California Redwood Association, 405 Enfrente Dr., Suite 200, Novato, CA 94949
Compost bin design: Kathleen Bond Borie
Technical art: Eugene Thompson
Garden tools and cart: Ames Lawn and Garden Tools, P.O. Box 1774, Parkersburg, WV 26102

COMPOST BIN

35" HIGH × 37-1/2" WIDE × 96" LONG

GLUE AND CLINCH NAIL HALF LAP JOINTS

STAPLE—CC 4" APART

MESH—S

MESH—T

MESH—U FOLD FRONT EDGE UNDER 2"

TAPER END TO 3-1/2"

1/2"-DIA. BOLT HOLE (TYPICAL)

3/4" SETBACK (ALL FRAMES)

1-1/2" SPACE (TYPICAL)

RECESS FOR FOLDED MESH

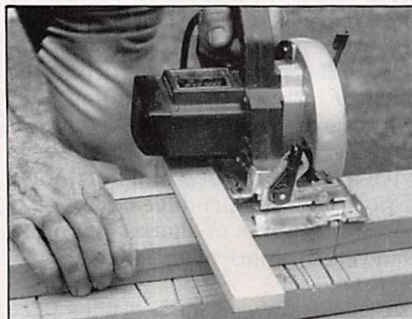
DETAIL 1

DETAIL 2

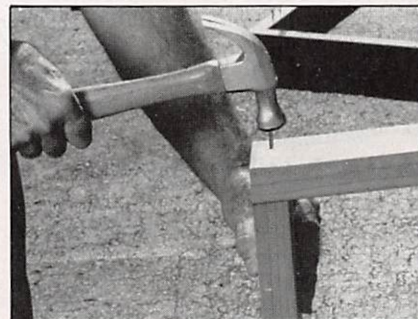
where the mesh has been fully attached (Photo 9). Attach the remaining two rear runners with drywall screws after the divider frames have been bolted to the baseboards.

End Frames

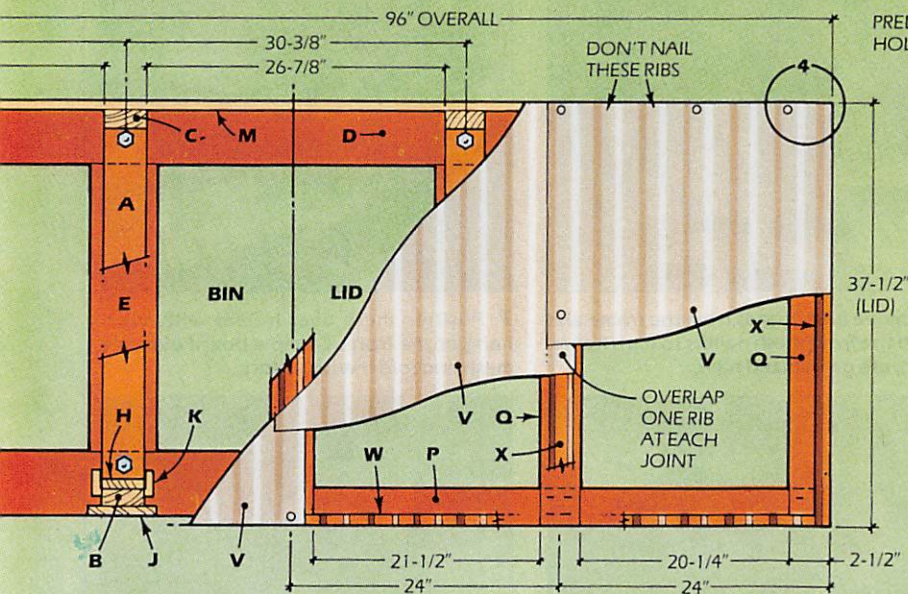
Bolt the end frames to the baseboards (Photo 10). Prop up the unattached mesh while you tighten the bolts that attach the divider frames to the baseboards (Photo 11). Tighten the nut so the square section of the carriage bolt bites firmly into the baseboards. After the frames are bolted in place, fold



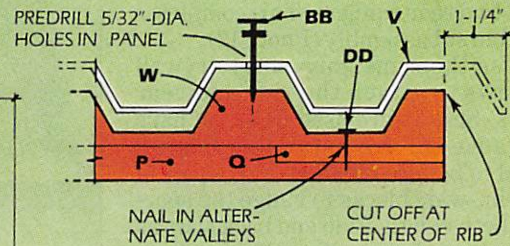
1 For neat crosscuts, make a T-guide from scrap wood. Run saw's shoe against guide for straight and bevel cuts.



2 Each frame section is made up of four pieces nailed together and marked with chalk to indicate placement.



COMPOST BIN—TOP VIEW



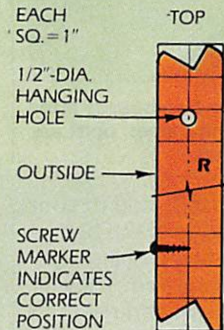
DETAIL 4

MATERIALS LIST—COMPOST BIN

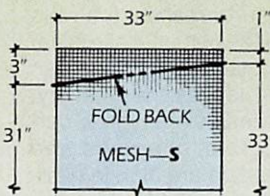
(All lumber Construction Heart grade redwood)

Key	No.	Size and description (use)
A	8	1½ x 3½ x 35" (frame)
B	4	1½ x 3½ x 28½" (frame)
C	2	1½ x 3½ x 30½" (frame)
D	2	1½ x 5½ x 96" (base frame)
E	2	¾ x 5½ x 25½" (mesh nailer)
F	2	¾ x 4½ x 25½" (mesh nailer)
G	2	¾ x 2 x 28½" (mesh nailer)
H	2	¾ x 3½ x 28½" (mesh nailer)
I	2	¾ x 5¼ x 31½" (front runner)
J	2	¾ x 5½ x 31½" (front runner)
K	6	¾ x 2 x 31½" (rear runner)
L	10	¾ x 5½ x 35¾" (side slat)
M	5	¾ x 5½ x 94½" (back slat)
N	15	¾ x 5½ x 26⅝" (front slat)
O	3	¾ x 1½ x 26⅝" (front slat)
P	25	¾ x 2½ x 96" (lid frame)
Q	5	¾ x 2½ x 37½" (lid frame)
R	2	¾ x 2 x 35½" (lid support)
S	6	33 x 34" wire mesh (divider)
T	3	26½ x 32½" wire mesh (back)
U	3	26½ x 31" wire mesh (bottom)
V	2	26¾ x 96" corrugated panel cut to four 37½" lengths (cover)
W	3	6-ft. pieces corrugated redwood molding
X	3	6-ft. lengths vertical redwood molding cut to 35¾"
Y	4	3" Tee Hinge, Stanley No. 75-4030
Z	8	½"-dia. x 3½" carriage bolt, washer and nut, zinc plated
AA		1⅝" galvanized drywall screws
BB		1¾" aluminum plastic panel nails
CC		¾" galvanized staples
DD		¾" nails
EE		3d galvanized common nails
FF		4d galvanized common nails
GG		6d galvanized common nails
HH		16d galvanized common nails

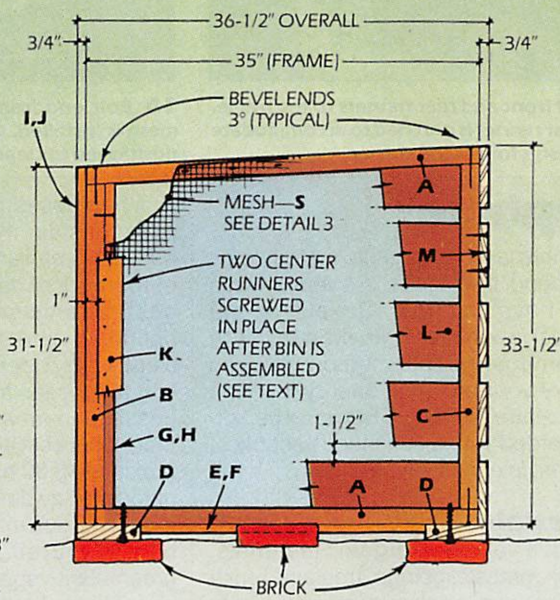
Misc: Plastic resin glue, eight bricks.



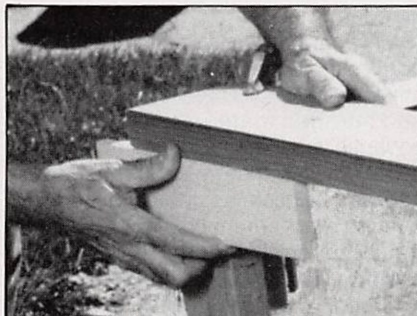
LID SUPPORT



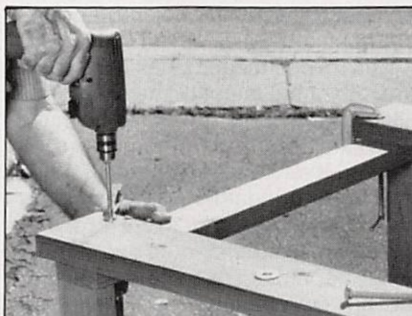
DETAIL 3



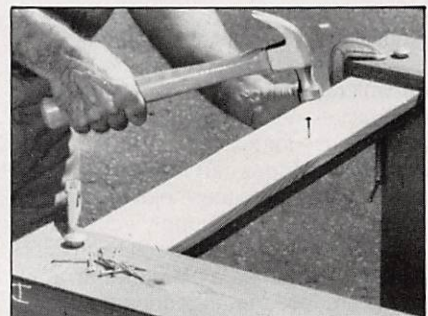
CROSS SECTION



3 With frame inverted, position the baseboards using a scrap block at edge of frame to gauge ¾-in. overhang.



4 Clamp the baseboards to the frames and bore the holes for the carriage bolts that attach the baseboards.

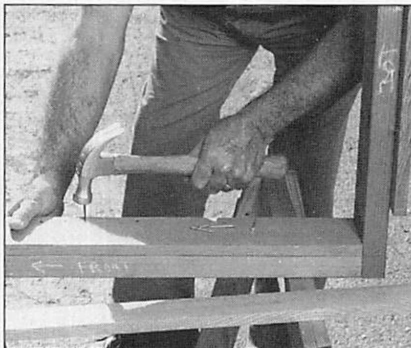


5 With the frame inverted, attach the mesh nailers to the bottom of each frame using 6d galvanized common nails.

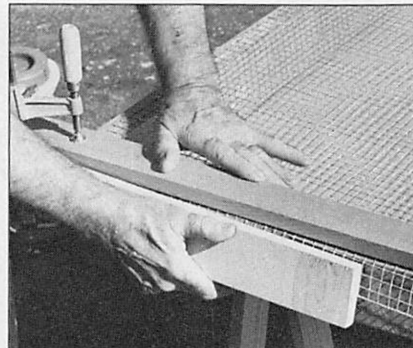
down the mesh on the remaining two divider frames and screw down the last two rear runners. This completes the bin subassembly (Photo 12).

Use the same galvanized drywall screws to attach the side and rear slats. Screws are used in lieu of nails because the free-standing frames tend to bounce if nailed. Use a pair of 1½-in.-wide blocks to gauge the spacing between the side and back slats as you screw them in place (Photo 13).

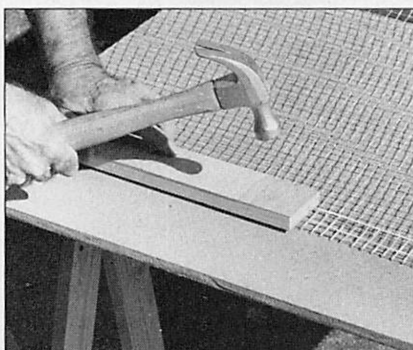
Attach the back mesh pieces after the rear slats are attached. The bottom mesh pieces go on last. Crosscut the drop-in front slats to size. The



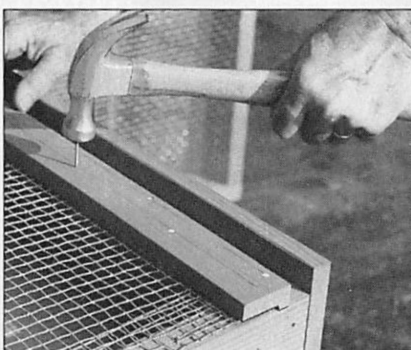
6 Remove baseboards from the frame and attach the front mesh nailers to each frame. Again, use galvanized nails.



7 Position mesh over frames with overhang at the front. Clamp a board over the mesh and fold it with a block.



8 Place the mesh on a flat surface and hammer over the fold. It's faster to tap on the block than hammer the mesh itself.



9 Nail front and rear runners to the frame. The rear runner is notched to accommodate the mesh's fold at the corner.



10 Bolt end frames to baseboards after mesh is installed. On end frames, bolts are positioned to clear nailers.

Using The 3-Bin Composter

● Imagine loading up your bagged leaves, grass clippings and piles of brush from your yard, heading to your landfill, and being turned away at the gate by a large sign saying: "Yard wastes are now banned from this landfill." This scenario is happening all across the country. At last count, nearly 20 states have passed or are considering legislation banning yard wastes from landfills because there simply isn't enough room for it anymore. When you consider that food and yard waste account for about a quarter of our nation's garbage, it's not surprising that states and municipalities are setting up programs that encourage one alternative to landfilling it all—namely, composting.

Composting is not only one solution to our solid waste woes, it also is the least expensive and best way to improve that poor excuse for soil that surrounds your house. Compost can loosen clay soil and improve the water-holding capacity of sandy soil. It can supply your plants with nutrients, neutralize soil toxins and metals, and act as a pH buffer so your plants are less dependent on a specific soil pH. No need to buy peat moss and topsoil. Compost does the job of both.

You can build an outdoor compost pile by simply layering organic materials on the ground. If left alone, in a year or more you'll have compost. Or you can get compost in a matter of weeks with this 3-bin composter. This method requires more of your time and energy than the laissez-faire approach. But you'll be aptly rewarded with a continuous supply of compost to enrich your soil.

Materials

Collect a variety of organic materials. Leaves, grass clippings, tree and brush prunings, sod, seaweed, garden plants pulled up at season's end, manure, hay, straw, black-and-white newspaper (shredded, minus the colored advertising supplements) and even your kitchen scraps (minus meat, bones and fat) will turn into rich compost. The smaller the pieces of materials, the faster the microorganisms can break them down. So chop up those baseball-bat-sized zucchini from your garden, and rent or borrow a chipper/shredder to cut up any big branches. Avoid all colored paper and all glossy paper because some of the inks contain heavy metals. Pet litter and sewage should be avoided because they contain toxins that a backyard pile cannot eliminate.

When deciding what to add to your pile, consider the needs of the bacteria—the organisms that are doing most of the work of decomposition. They digest organic materials and release bound-up nutrients, and to do this efficiently they need a certain ratio of carbon to nitrogen in the pile. Although impossible to measure exactly, the ratio that works best in the compost pile is approximately 30 parts carbon to one part nitrogen. Sawdust, leaves and other dry, tough, fibrous materials are high in carbon. Manures, grass clippings and green plant vegetation are high in nitrogen. Think of carbon as the food and nitrogen as the digestive enzymes, and add roughly 30 times as much carbon as nitrogen.

Mix your materials on the ground and add them to the first bin. If you cannot mix them first, alternate layers of carbon and nitrogen materials. Your pile will soon tell you if the carbon/nitrogen ratio is out of kilter. If there's too much nitrogen, you'll notice the unpleasant odor of ammonia gas emanating from the pile as the excess nitrogen is released. To remedy this, you can add more well-chopped carbon materials and mix them into the pile. If you have the opposite problem of too much carbon, decomposition slows down. In this case, try mixing

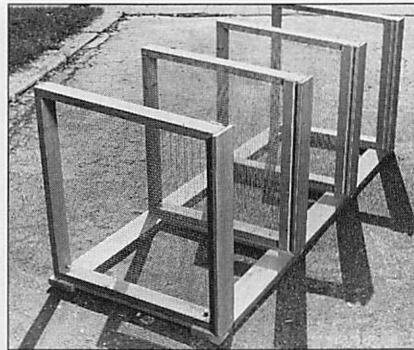
drop-in slats are separated by nails that are driven partially into the edge of each slat. Leave ½ in. of each nail exposed to provide the needed ventilation gap. To drive these nails to a uniform height, butt a piece of ½-in.-thick hardwood against the nail after it has been started. Drive the nail until the head touches the guide block.

The Lid

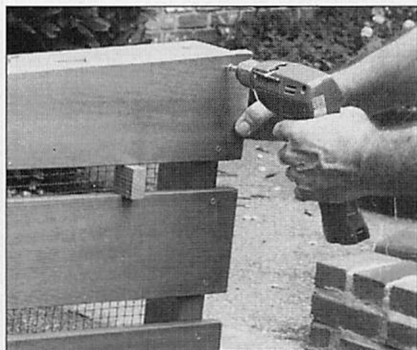
Assemble the lid frame with half lap joints. Mark the width of each frame member on the ends of the pieces where appropriate. Set the saw blade to cut a ⅜-in.-deep kerf (half the



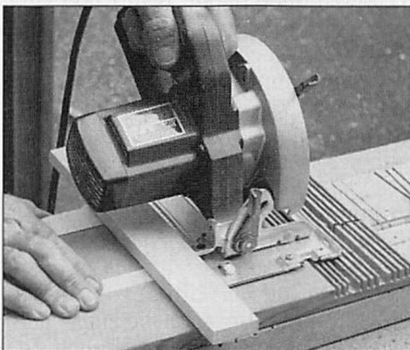
11 Don't nail mesh at the bottom of the two center frames so you have access to nut. Tighten the nut until bolt digs in.



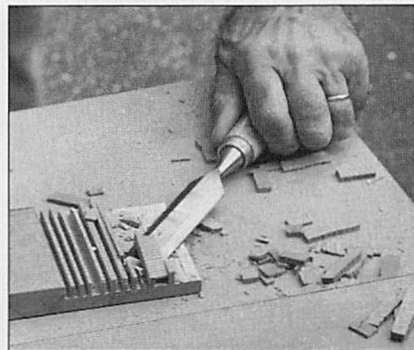
12 Complete the structural assembly before attaching the side and back slats and the rest of the wire mesh.



13 Screw slats to end frames. For correct spacing, support each slat while fastening with 1½-in.-wide blocks.



14 Use a T-guide to make the repeated kerf cuts in the lid frame. Kerfs should be no more than ¼ in. apart.



15 Clean out between the kerfs with a sharp chisel. The overlap's depth equals half the stock's thickness.

in a nitrogen source such as fresh grass clippings, fresh manure or blood meal. If you can't mix the materials easily, make holes in the pile and pour in the nitrogen materials.

Activators

You may want to add an activator to make sure your pile has the necessary microorganisms. Finished compost, soil and manure are excellent activators. Or you can use commercially available activators, such as Bio-Activator made by Necessary Trading Co. and Compost PLUS made by Ringer, which contain dormant bacteria and fungi. (A suppliers Source List appears on page 56.) These activators come in a powdered form, and a little bit will activate a large amount of compost. They can be sprinkled on top of each layer of materials you add to your pile. Many garden centers carry activators, or you can order directly from the manufacturers.

Moisture

Microorganisms need adequate moisture to decompose organic matter. Try to keep the materials in your pile as moist as a well-wrung sponge. As you build your pile, sprinkle water on top of each layer, but take care not to saturate. Then reach into your pile every once in a while and squeeze a handful of materials. If they are too wet, turn the pile to help it dry out. If you need to add more water, insert your garden hose or watering can into the middle of the pile in a few places.

Oxygen

To stimulate the most efficient bacteria, keep your pile well aerated. The aerobic or oxygen-loving bacteria are 90 percent more efficient at breaking down organic matter than the anaerobic bacteria that take over in a pile devoid of oxygen. Furthermore, anaerobes produce substances that smell like ammonia and rotten eggs.

You can encourage airflow through the bottom of the pile by using bulky materials such as corn stalks for the bottom layer. Commercially available aerating tools cost about $15 from gardening catalogs, such as Gardener's Supply and Smith & Hawken. In my experience, they work best if the materials in your pile are well chopped. Large, fibrous materials are difficult to lift with the tools.

Turning

When you turn a pile, you're taking advantage of the intensified microbial activity in the middle of the pile. Once the microorganisms have broken down the materials in the center, their activity slows, and the pile begins to cool down. Turning materials from the edges of the pile into the center provides additional food for the microorganisms, and as their activity increases, so does the temperature. Thus, turning can help raise the temperature high enough to kill weed seeds and disease organisms (about 150° F). If you want to keep your pile at maximum heating capacity, it's worth investing in a compost thermometer, which is basically a round thermometer face with a long metal probe that reaches into the compost pile. Gardener's Supply and Ringer catalogs carry them for about $18. Turn your pile whenever your thermometer tells you the temperature in the center of the pile has dropped below about 100° F. When turning no longer raises the temperature, your pile is probably well decomposed and ready to use. Keep in mind that turning is only beneficial up to a point. Turning too frequently can cause a disruption in the process that outweighs any benefit. In a fast-cooking pile, every three days is often enough. In a slower pile, every three weeks may be sufficient. Also remember that you can make compost year-round in moderate climates. But in colder regions, you and the microorganisms can take the winter off.

—Kathleen Bond Borie

thickness of the stock) and, running the saw against a T-guide, cut a series of kerfs no more than ¼ in. apart. Chisel out the waste (Photos 14 and 15). Cut two or more frame pieces at a time during this operation. The combined width makes a more stable base for the saw, as opposed to cutting one piece at a time.

The five crossmembers are attached to the two lengthwise members with plastic resin glue and clinched nails (Photo 16).

The lid is surfaced with four pieces of fiberglass-reinforced plastic Filon panel cut from two 8-ft.-long panels. We used the Cool Rib panel in Cool White color, but other Filon types and colors will work as well. These panels are sold at lumberyards and home centers (BP Chemicals, Commercial Composites, Filon Products, 12333 Van Ness Ave., Hawthorne, CA 92050). The panels are attached to matching corrugated redwood molding that is sold with the panels.

Lid Assembly

Support the panels while cutting them by resting them atop the corrugated redwood molding (Photo 17). Cut two panels at a time. Mark the appropriate length on one panel and fasten a piece of tape across its width. Mark the cutting line on the center of the tape and clamp a fence across the panel to run the saw against. Make the cut with a fine-toothed plywood or crosscut blade. In order to fit the four panels across the 8-ft. length of the lid with a 1-rib overlap, trim off 1¼ in. from the first and last rib using tin snips.

Nail the corrugated molding strips to the front and rear of the frame after cutting off the starting end to conform to the trimmed panel. Nail Filon vertical molding strips centered on the crossframe pieces (Photos 18 and 19).

Use aluminum nails with neoprene washers to attach the Filon panels to the moldings (Photo 20). Prebore the nailholes in the panels and the molding with a $^{5}/_{32}$-in. bit. Nail the panels as shown in the drawing, and, when this is completed, attach the lid to the bin with four hinges.

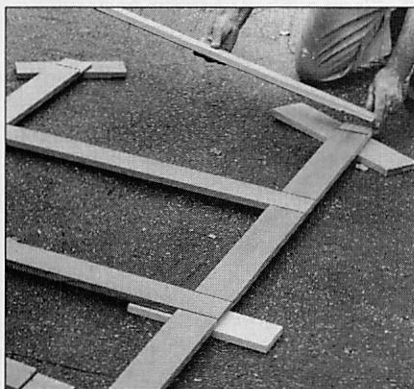
We leveled the bin across eight bricks, one under each carriage bolt location. The bricks were slightly recessed into the soil and checked with a long board and level to obtain a true plane.

In order to prevent the weight of the compost from depressing the bottom mesh and loosening it, a brick was positioned under the center of each bin. Of course, you can substitute any large flat stones for the bricks. Just be sure that the whole unit is relatively level so that the bin's lid will be able to work properly.

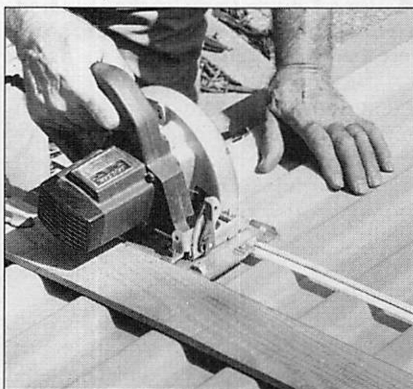
Complete the bin by nailing down the back and bottom mesh. The front edge of the bottom mesh is folded like the sides (Photo 21). **PM**

Composting Supplies Source List

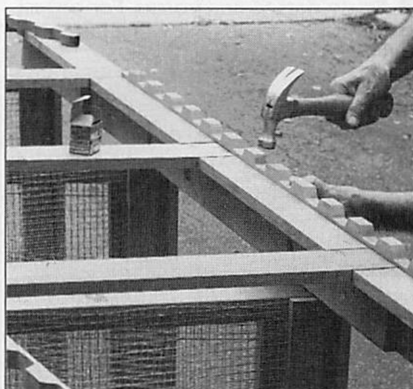
- Alsto's Handy Helpers, P.O. Box 1267, Galesburg, IL 61401
- Gardener's Supply Co., 128 Intervale Rd., Burlington, VT 05401
- Kemp Co., 160 Koser Rd., Lilitz, PA 17543
- Mellinger's, Inc., 2310 W. South Rangen Rd., N. Lima, OH 44452-9731
- Natural Gardening Research Center, P.O. Box 149, Sunman, IN 47041
- Necessary Trading Co., P.O. Box 305, 422 Salem Ave., New Castle, VA 24127
- Nitron Industries, Inc., P.O. Box 1447, 4605 Johnson Rd., Fayetteville, AR 72702
- Ringer Corp., 9959 Valley View Rd., Eden Prairie, MN 55344-3585
- Smith & Hawken, 25 Corte Madera, Mill Valley, CA 94941



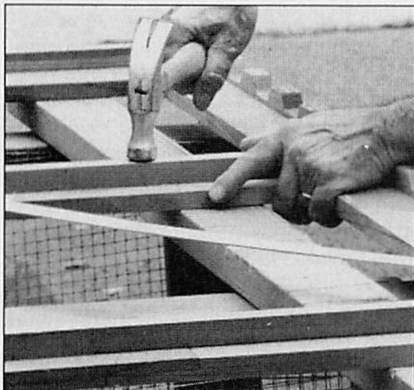
16 Glue together the frame members with water-resistant plastic resin glue. Then, clinch nail the pieces together.



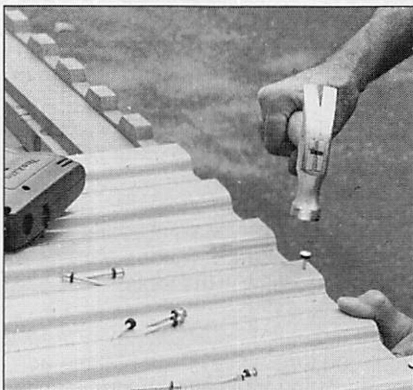
17 Support the panels on corrugated molding. Mark a cutline with tape and run the saw's shoe against a fence.



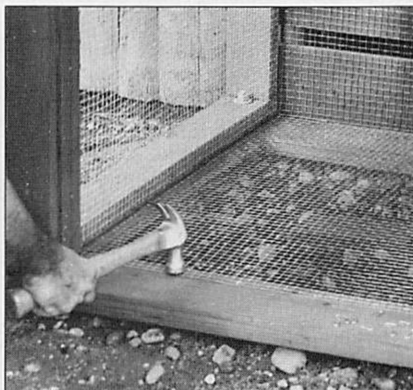
18 Nail the corrugated redwood molding through alternate valleys. Molding is sold with the corrugated panels.



19 Vertical redwood molding is installed on the frame so it aligns precisely with ridges on corrugated molding.



20 Prebore clearance holes in panel ridges and molding. Attach panels with aluminum nails that have rubber washers.



21 Situate the bin on level ground and place a brick at the center of each bin to support mesh. Nail in the bottom mesh.